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ABSTRACT

The pre-technology program described in this report was instituted at Mercer County Community College in 1981 to help meet the educational and career counseling needs of disadvantaged, minority, and women students. The first section outlines the program's objectives which were to identify and recruit into the program educationally, culturally, or economically disadvantaged students who have potential in technical areas but lack necessary basic skills; to conduct basic skills and career assessments; to provide basic skills instruction, exposure to technical career opportunities, and ongoing counseling and other support services; and to assist program completers in enrolling in regular postsecondary technical programs. Next, the criteria for program participation and the sources used to identify potential participants are examined. The next section describes the program's instructional activities, which combine basic skills instruction, specially designed technical courses serving as prerequisites for specific technical programs, and a technical elective. Sections describing the program's academic, personal, and career counseling services; its tutorial support activities; and its career enrichment activities are followed by program evaluation results, showing an 88% completion rate and that only 8% of the participants decided not to enter a technical program. Finally, the implications of the evaluation findings are discussed in terms of the program's overall success. (DAB)

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THE PRE-TECHNOLOGY PROGRAM
FOR DISADVANTAGED, MINORITY AND WOMEN STUDENTS

by Dr. Ronald Gepner

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INTRODUCTION

PROBLEM

As America enters the 1980's, the national goal of improving occupational access for disadvantaged individuals, minorities, and women to core employment areas within the economy remains only partially fulfilled. While great strides have been made, the lack of basic educational skills and the means for acquiring such skills have impeded the entrance of the disadvantaged, minorities, and women into technical occupations. As a result, there is a severe shortage of minorities and women in technical occupations. While employment opportunities in technical areas grow each year, the low number of the aforementioned populations who enter technical fields results, in many cases, in unfilled jobs.

The problem is "How do educational institutions prepare disadvantaged minorities and women for these technical occupations?" In 1981 Mercer County Community College instituted a program which impacts the educational and career counseling needs of these student populations. The initial program was partially funded by the New Jersey Department of Education, Division of Vocational Educational and Career preparation.

OBJECTIVES

The objectives of the program are as follows:

1. To identify disadvantaged minority group members and women who have potential in the technical areas, but who otherwise would have minimal chance for success in standard technical curricula due to deficiencies in reading, computational, and technical skills.
2. To enroll these students as participants in the Pre-Technology program.
3. To conduct basic skills and career assessment, and to provide basic skills instruction for participants.

4. To provide participants with ongoing counseling and other support services, as needed.
5. To provide participants with career exposure to a wide spectrum of technical opportunities available to them.
6. To assist a minimum of 80% of participants who successfully complete the program to enroll in regular postsecondary technical programs at MCCC or at other schools of their choice.

PROCEDURES USED

In order to identify students with technical career interests who could benefit from the instructional, counseling, and tutorial activities in the program, the following criteria must have been met to be eligible for participation:

- The student must have been enrolled in or accepted for enrollment in the College.
- The student must have met Federal citizen and residency requirements.
- The student must have come from an educationally-, culturally-, or economically-disadvantaged background.
- The student must have been an individual who, as a result of a disadvantaged educational, cultural, or economic background, demonstrated a need for the instructional and counseling activities described in the project, in order to develop the skills needed for postsecondary programs of technical study.

Inability to meet any or all of these criteria is just cause for a student's exclusion from eligibility to participate in the College's program.

To identify potential participants who meet these criteria, the College utilizes three sources and methodologies to obtain information, to access referrals, and to implement these procedures.

The sources include:

1. Previous academic grades and the assessments of professional educators.
2. The administration to potential participants of an assessment questionnaire.
3. The results of the New Jersey Basic Skills Placement Test. These tests of intelligence, interest, aptitude, and achievement also assist students in analyzing their potential for and interest in technological areas of study.

Instructional Activities

The Pre-Technology program is designed to provide the disadvantaged, minorities, and women with a realistic introduction to technical occupations through course work, laboratory projects, and occupational education. The program stresses the development of basic skills which are prerequisites to the successful completion of degree and certificate programs in technology. It provides participants with a full range of tutoring, advisement, and counseling services designed to address the special problems often faced by these student populations.

This program also provides courses of instruction which can be applied to a number of different technical areas and which serve as prerequisites for specific technical program. At the end of the program's first year, 81% of the participants were enrolled in one or more technical courses leading toward a College degree or certificate which will prepare them for a variety of technical job openings.

The program is administered as a standard course of instruction at the College, involving curriculum modification, recruitment, instruction and supportive services. Vocational Education funds were used to assist with first year instructional and counseling costs, the purchase of educational materials and supplies, and program related meetings. The College assumes the costs for providing tutorial support, fringe benefits of program staff, and space/utilities.

The following format was designed to service the participants. Participants were block scheduled whenever possible.

PROGRAM INSTRUCTION CONTENT

FALL SEMESTER

Course		credit(s)
EN 090	Introduction to Technology *	3
EN 100	Technical Calculations *	1
MS 100	Basic Mathematics	3
ES 100	Basic Composition	3
ES 110	Basic Reading	3
		13

SPRING SEMESTER

MA 109	Elementary Algebra	3
EG 101	English Composition I	3
SC 105	Physical Science Concepts	3
-----	Technical Elective	3
		12

*These courses have been specially designed for this program.

These courses were chosen because they provide participants with the skills necessary to succeed in technical curricula leading to degrees or certificates. Irrespective of the technical curriculum chosen later, these are the fundamental learning areas, without which participants would have only minimal prospects

for success.

Each of the above courses has sections of approximately 15-20 participants; this allows the instructors to provide each participant with somewhat individualized instruction. By so doing, instructors avoid the repetition of methodologies which had resulted in insufficient secondary level performances by the participants. Each course contains built-in objectives, plus measurement strategies to assess participants' academic progress. To supplement instructional activities, the College provides for intensive counseling and tutorial support. These services are described more fully below.

In addition to the aforementioned courses designated for the participants, the project staff assists these students with the selection of courses from the College's technical curricula. This helps ensure that participants subsequently enroll in programs which are appropriate to their levels of ability and interest. By so doing, the potential for attrition is substantially reduced, and both the retention rate and participants' perceptions about their capabilities are expected to be heightened the following semester.

The College believes that this individualization and flexibility has developed a greater motivation to learn and a higher level of academic aspiration than would be the case in participants' previous educational situations. Besides improved skills, students acquire heightened self-awareness, improved self-image, and higher personal goals--all vital elements to success in postsecondary technical programs.

Counseling Activities

The counseling component consists of numerous activities and methodologies designed to address the participants' needs and interests and to insure their success. The range of counseling services available to participants included:

- Academic counseling
- Personal counseling
- Career counseling

Academic counseling insures that participants perceive which technical programs most closely approximate their own abilities and interests. This is provided because postsecondary students frequently enter programs with only vague ideas about their own abilities, about programs' requirements, or about employment prospects in a given field. Weekly academic counseling helps them clarify their own academic goals and interests; it also provides them with information about managing their study time and about effective study techniques.

The College also makes personal counseling available to participants. Their economic displacement and their urban environment had generated feelings of anxiety among participants which caused some to view postsecondary education as an extension of the earlier school situations which proved to be unresponsive to their needs. Individual counseling on a weekly basis alleviates these anxieties by bringing each participant to the self-realization of education as an opportunity for, rather than an impediment to, successful life experiences.

Furthermore, since students often grow anxious about their skills' marketability in times of economic uncertainty, the College provides group and individual career counseling to participants. In addition to the other counseling activities, participants obtain specific career information from the program director and counselor and have their interests, values, and abilities assessed

in individual sessions. All participants are part of weekly group counseling sessions, with individual counseling provided also on a weekly basis.

Tutorial Support

An important part of any instructional program for disadvantaged is a tutorial component. There is clear evidence that assistance given to an individual by another person from the same cultural/ethnic heritage correlates closely with significant improvement. The College, therefore, makes available tutorial support to assist participants. The College selects as tutors those students who have the academic capability and personal maturity to provide peer guidance to the participants. In their capacity as role models, the College's peer tutors are demonstrable proof that educational pursuits are viable means to long-term goals and successful life experiences.

Career Enrichment Activities

One portion of the program supports enrichment activities that address participants' technical and career interests. These activities include two field trips to technical facilities in the College's service area (e.g. RCA, Princeton Plasma Physics Lab) so that participants acquire firsthand information about local types of technical career opportunities and about the education needed to access these positions. Appropriate efforts are made to have participants meet minority and female employees who serve as role models.

To provide additional information and role models, the program staff invites minority and women professional personnel to address participants on campus in the Introduction to Technology course. For participants who may view business/industry as unresponsive to their needs, this direct access to role models serves

as demonstrable proof that area business/industry is firmly committed to employing minorities and women in technical occupations.

TABLE 1

FIRST YEAR PROGRAM STUDENT CATEGORIES

DISADVANTAGED STATUS:		100%
MALES	:	70%
FEMALES	:	30%
BLACK	:	66%
WHITE	:	30%
HISPANIC	:	4%

(all percentages rounded off to nearest whole number)

FINDINGS

1. Of the 86 participants entering the program, 88% completed the program.
2. Of the participants who completed the program, 80% enrolled in a technical elective the second semester.
3. In addition to the 80% who enrolled in a regular postsecondary technical elective, another 12% (for a total of 92%) expressed an interest in enrolling in a technical elective. These students were not permitted to enroll in a technical elective until the completion of additional preparation to assure reasonable success in such an elective.
4. In all, 8% of the program participants decided they would not enter into a technical program.

INTERPRETATION OF FINDINGS

1. The effectiveness of the personal counseling and ongoing support services inherent in the program is reflected in the fact that only 12% of the program participants dropped out compared to a college-wide dropout rate of approximately 20%.
2. While there were 8% of the program participants who decided not to enter into a technical program, these students were able to make a more informed career choice as a result of participating in the program.

CONCLUSIONS

The program identified disadvantaged, minority group members and women students who had potential in the technical areas, but who had minimal chances of success in standard technical curricula due to deficiencies in basic skills.

At the conclusion of the first year, 88% of the students completed the program. A total of 92% of these students enrolled in or indicated desire to enroll in a regular postsecondary technical program.

All statistics and results indicate that the program successfully meets all its stated objectives.

References

Gepner, Ronald Development of a Model for Identifying Potential Dropouts Among Entering Community College Students, 1981. University Microfilms, Inc. Ann Arbor, Michigan.

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